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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/704,291	Applicant(s) LEE, CHENG Y.
	Examiner Benjamin R Bruckart	Art Unit 2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Detailed Action

Status of Claims:

Claims 2-45 are pending in this Office Action.

The amendment to the specification is accepted.

Claims 2-9, 13, 17, 20-40, 45 are rejected under 35 U.S.C. 103(a) as being anticipated by U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No 5,920,699 by Bare.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No 5,920,699 by Bare in view of U.S. Patent No. 5,995,503 by Crawley et al.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No 5,920,699 by Bare in view of U.S. Patent No. 6,205,488 by Casey et al

Claims 18-19, 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No 5,920,699 by Bare in further view of U.S. Patent No. 6,473,421 by Tappan.

Response to Arguments

Applicant's arguments filed in the amendment filed July 5, 2004, have been considered but are moot in view of the new ground(s) of rejection.

Applicant's invention as claimed:

Regarding claim 3,

The Dobbins reference teaches a method of establishing explicit constrained edge-to-edge paths in a one of an Internet Protocol (IP) (Dobbins: col. 2, lines 28, 29; col. 4, lines 21-24), MPLS and Optical network that uses a modified open shortest path first (OSPF) routing protocol for constraint route distribution and path computation (Dobbins: col. 24, lines 2-5, 13-15; Fig. 21), comprising steps of:

provisioning at least one OSPF router in the network that supports constraint path setup with traffic engineering route exchange router (TE-X) functionality (Dobbins: col. 3, lines 43-53) to permit each of the at least one TE-X to maintain a traffic engineering link state database (TE-LSDB) (Dobbins: col. 5, lines 10-17); and

querying the nearest one of the at least one TE-X to obtain an explicit edge-to-edge path satisfying specified traffic engineering (TE) constraints (Dobbins: col. 2, lines 60-col. 3, line 8; defined col. 12, lines 54- col. 13, line 15).

The Dobbins reference does not teach unicasting LSA to only the nearest but does teach multicasting LSA for discovery and then retransmitting unicast LSA updates (Dobbins: col. 14, lines 58-64).

The Bare reference teaches sending traffic engineering link state advertisement (TS-LSA) messages directly via unicast from the OSPF routers to only a nearest one of the at least one TE-X, without flooding the TE-LSAs to other routers in the network (Bare: col. 4, lines 12-25; col. 5, lines 62 col. 6, lines 15).

The Bare reference further teaches the invention overcomes unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of a modified open shortest path first routing protocol as taught by Dobbins while employing unicast packets as taught by Bare in order to overcome unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Claims 2, 4-9, 13 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Bare.

Regarding claim 2, the method as claimed in claim 3 wherein the step of querying is performed by a first edge router in the network (Dobbins: col. 2, lines 60 – col. 3, line 8; Bare: col. 9, lines 21-30).

Regarding claim 4, the method as claimed in claim 3 further comprising a step of discovering the nearest one of the at least one TE-X via normal OSPF Router Link-State Advertisement messages (Dobbins: col. 13, lines 50-54; Bare: col. 5, lines 59- col. 6, lines 12-15).

Regarding claim 5, the method as claimed in claim 4 further comprising a step of compiling and storing a list of all TE-Xs in a routing area and using the list to select a nearest TE-X based on a route cost factor associated with a shortest path route to respective TE-Xs in the list (Dobbins: col. 13, lines 50-54).

Regarding claim 6, a method as claimed in claim 3 further comprising a step of discovering peer TE-Xs in the network by learning at each TE-X of other TE-Xs using normal OSPF Router Link-State Advertisement messages (Router LSAs), and storing a list of other TE-Xs discovered in the network (Dobbins: col. 13, lines 65 – col. 14, line 5).

Regarding claim 7, a method as claimed in claim 6 further comprising a step of sending one of a Hello and Keep-Alive message directly via unicast to each other TE-X discovered in the network (Dobbins: col. 14, lines 2-16; Bare: col. 4, lines 12-25; col. 6, lines 12-15).

Regarding claim 8, the method as claimed in claim 7 further comprising a step of sending traffic engineering link states from each of the at least one TE-X to each other TE-X discovered in the network using a bi-directional communications connection setup with

each TE-X (Bare: col. 4, lines 12-25; col. 6, lines 12-15), in order to synchronize the TE-LSDBs (Dobbins: col. 14, lines 17- 23, lines 36-44).

Regarding claim 9, the method as claimed in claim 3 wherein each of the at least one TE-X advertises its capability as a TE-X using a TE-bit in an Options field of Router Link-State Advertisement (Router LSA) messages (Dobbins: col. 15, lines 6-38; TOS type of service and metrics fields; col. 13, lines 65 – col. 14, line 5).

Regarding claim 13, the method as claimed in claim 3 wherein the TE-LSAs include type, length, value, (TLV) fields to define router addresses and link states (Dobbins: col. 15, lines 6-38).

Regarding claim 17,

The Dobbins reference teaches a traffic engineering route exchange router (TE-X) in a network that uses an open shortest path first (OSPF) routing protocol (Dobbins: col. 3, lines 43-49, col. 24, lines 13-15), comprising:

a) a traffic engineering link-state data base (TE-LSDB) compiled using traffic engineering link-state advertisement (TE-LSA) messages (Dobbins: col. 5, lines 10-17)

b) a messaging system for exchanging TE-LSA messages with peer TE-Xs in the network using a bi-directional communications connection set up with each peer TE-X (Dobbins: col. 16, lines 56-62).

The Dobbins reference does not teach unicasting LSA to only the nearest but does teach multicasting LSA for discovery and then retransmitting unicast LSA updates (Dobbins: col. 14, lines 58-64).

The Bare reference teaches receiving directly via unicast from OSPF routers in the network (Bare: col. 4, lines 12-25; col. 6, lines 12-15), each TE-X in the network receiving the TE-LSAs only from OSPF routers that have determined that the TE-X is a nearest one of the TE-Xs in the network (Bare: col. 4, lines 12-25; col. 5, lines 62 col. 6, lines 15) using a bi-directional communications setup (Bare: col. 4, lines 12-25).

The Bare reference further teaches the invention overcomes unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of a modified open shortest path first routing protocol as taught by Dobbins while employing unicast packets as taught by Bare in order to overcome unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Claims 20-29 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Bare.

Regarding claim 20, the TE-X as claimed in claim 17 wherein on initialization the TE-X advertises its presence in the network using router link-state advertisement (Router LSA) messages (Dobbins: col. 13, lines 65- col. 14, line 23).

Regarding claim 21, the TE-X as claimed in claim 17 wherein a TE-bit is set in the Router LSA messages to advertise other routers in the network that the TE-X has traffic engineering route exchange capability (Dobbins: col. 15, lines 6-38; col. 13, lines 65 – col. 14, line 5).

Regarding claim 22, the TE-X as claimed in claim 17 wherein the TE-X discovers peer TE-Xs in the network (Dobbins: col. 13, line 65- col. 14, line 23).

Regarding claim 23, the TE-X as claimed in claim 22 wherein the TE-X discovers peer TE-Xs in the network by exchanging normal OSPF routing information with other routers in the network and creating adjacencies with neighbors in the network (Dobbins: col. 14, lines 17-25).

Regarding claim 24, the TE-X as claimed in claim 23 wherein the TE-X further derives and stores a list of peer TE-Xs in the network using a downloaded domain link-state database (Dobbins: col. 14, lines 17-25; col. 5, lines 10-17).

Regarding claim 25, the TE-X as claimed in claim 24 wherein the TE-X further sends one of Hello and Keep-Alive messages directly via unicast to the other TE-Xs in the list in order to discover a designated TE-X and a backup designated TE-X in the network (Dobbins: col. 13, lines 50-54; col. 14, lines 2-16; Bare: col. 5, lines 59- col. 6, lines 12-15).

Regarding claim 26, a TE-X as claimed in claim 25 wherein the TE-X exchanges TE-LSA messages with the designated TE-X after peering with the designated TE-X, to obtain all current TE-LSAs for the network, and stores the TE-LSAs in the TE-LSDB (Dobbins: col. 14, lines 17-25, lines 36-46).

Regarding claim 27, a TE-X as claimed in claim 26 wherein the TE-X flushes from the TE-LSDB obsolete TE-LSAs when more current TE-LSAs are received from an OSPF router in the network, which originated the TE-LSA (Dobbins: col. 14, lines 36-46; flush is taken to be similar as update).

Regarding claim 28, a TE-X as claimed in claim 17 wherein the TE-X:

a) accepts queries from a first OSPF edge router for an explicit route between the first OSPF edge router and a second OSPF edge router in the network (Dobbins: col. 2, lines 60 – col. 3, line 8; col. 15, lines 52-62);

b) computes the explicit route using information stored in the TE-LSDB (Dobbins: col. 5, lines 10-17); and

c) sends information relating to the explicit route to the first OSPF edge router (Dobbins: col. 26-31; shown in example to send data back).

Regarding claim 29, a TE-X as claimed in claim 27 wherein the TE-X updates the TE-LSDB when the information respecting the explicit route is sent to the first OSPF router (Dobbins: col. 5, lines 13-15).

Regarding claim 30,

The Dobbins reference teaches a method of reducing traffic engineering messaging loads in an OSPF network (Dobbins: col. 5, lines 45-50), comprising steps of:

configuring at least one OSPF router in the OSPF network as a traffic engineering route exchange router (TE-X) (Dobbins: col. 24, lines 13-15);

provisioning the at least one TE-X to advertise to other OSPF routers in the network (Dobbins: col. 3, lines 43-53); and

provisioning the other OSPF routers in the network to send traffic engineering link state advertisement (TE-LSA) messages; and

querying the nearest one of the at least one TE-X for an explicit route to an edge router in the network (Dobbins: col. 5, lines 10-17; col. 2, lines 60 – col. 3, line 8; querying the nearest is inherent in definition of OSPF algorithm and the behavior is described in col. 12, lines 54- col. 13, line 15; Figure 5a).

The Dobbins reference does not teach unicasting LSA to only the nearest but does teach multicasting LSA for discovery and then retransmitting unicast LSA updates (Dobbins: col. 14, lines 58-64).

The Bare reference teaches unicast to only a nearest one of the at least one TE-X (Bare: col. 4, lines 12-25; col. 5, lines 62 col. 6, lines 15), and to query only the nearest one of the at least one TE-X for an explicit route to an edge router in the network (Bare: col. 5, lines 62- col. 6, line 15).

The Bare reference further teaches the invention overcomes unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of a modified open shortest path first routing

protocol as taught by Dobbins while employing unicast packets as taught by Bare in order to overcome unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Claims 31-37 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Bare.

Regarding claim 31, the method as claimed in claim 30 further comprising a step of enabling the at least one TE-X to build a traffic engineering link-state database (TE-LSDB) using the TE-LSA messages sent directly via unicast from the OSPF routers in the network (Bare: col. 4, lines 12-25; col. 5, lines 62 col. 6, lines 15; Dobbins: col. 14, lines 17-23, lines 36-46; col. 5, lines 10-17), and further enabling the TE-X to use the TE-LSDB for computing the explicit route (Dobbins: col. 15, lines 52-62).

Regarding claim 32, the method as claimed in claim 31 further comprising a step of enabling the at least one TE-X to send copies of the TE-LSA messages directly using a bi-directional communications connection set up with each peer TE-X in the OSPF network (Bare: col. 4, lines 12-25; col. 6, lines 12-15; Dobbins: col. 16, lines 56-62), and to receive TE-LSA messages directly using a bi-directional communications connection set up with each peer TE-X in the OSPF network (Dobbins; col. 14, lines 17-25).

Regarding claim 33, the method as claimed in claim 32 further comprising a step of enabling the at least one TE-X to flush outdated TE-LSAs from the TE-LSDB when a more current TE-LSA is received (Dobbins: col. 14, lines 36-46, 60-64; update packets).

Regarding claim 34, the method as claimed in claim 30 further comprising steps of:

enabling the other OSPF routers in the network to compile a list of the at least one TE-X in the network using network routing information (Dobbins: col. 5, lines 10-25; the routers or switches build a links database); and

to select the nearest TE-X based on a least cost route of respective routes to respective ones of the at least one TE-X (Dobbins: col. 2, lines 60 – col. 3, line 8; querying the nearest is inherent in definition of OSPF algorithm and the behavior is described in col. 12, lines 54- col. 13, line 15; Figure 5a).

Regarding claim 35, the method as claimed in claim 34 further comprising a step of enabling the other OSPF routers in the network to select a nearest TE-X by sending a probe message to the at least one TE-X in an order of least cost route until a one of the at least one TE-X acknowledges the probe message, thereby accepting to serve as nearest TE-X to the other OSPF router sending the probe message (Dobbins: col. 13, lines 50-54).

Regarding claim 36, the method as claimed in claim 35 further comprising a step of enabling the other OSPF routers in the network to select a backup TE-X by sending a probe message to TE-Xs remaining after selecting the nearest TE-X in an order of least cost route until a one of the remaining TE-Xs acknowledges the probe message, thereby accepting to serve as backup TE-X to the other OSPF router sending the probe message (Dobbins: col. 13, lines 50-59).

Regarding claim 37, the method as claimed in claim 30 further comprising a step of enabling the at least one TE-X to advertise to other OSPF routers in the network using a TE-bit in an option field of an OSPF Router LSA message (Dobbins: col. 15, lines 6-38; TOS type of service and metrics fields; col. 13, lines 65 – col. 14, line 5).

Regarding claim 38,

The Dobbins reference teaches a data network that uses an open shortest path first (OSPF) routing protocol, comprising (Dobbins: col. 24, lines 13-15; col. 5, lines 45-50):

a) a plurality of OSPF routers, at least one of the OSPF routers being provisioned to function as a traffic engineering route exchange router (TE-X) (Dobbins: col. 3, lines 43-53; col. 24, lines 13-15; col. 5, lines 10-17); and

b) a remainder of the routers being provisioned to send traffic engineering link-state advertisement (TE-LSA) messages (Dobbins: col. 13, lines 65- col. 14, line 5);

to enable the nearest one TE-X to maintain a traffic engineering link-state database (TE-LSDB) for computing explicit routes between edge routers in the data network (Dobbins: col. 13, lines 65-col. 14, line 5; col. 4, lines 21-24; col. 5, lines 10-17).

The Dobbins reference does not teach unicasting LSA to only the nearest but does teach multicasting LSA for discovery and then retransmitting unicast LSA updates (Dobbins: col. 14, lines 58-64).

The Bare reference teaches unicasting directly via unicast to only a nearest one on the at least one TE-X (Bare: col. 4, lines 12-25; col. 5, lines 62 col. 6, lines 15).

The Bare reference further teaches the invention overcomes unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of a modified open shortest path first routing protocol as taught by Dobbins while employing unicast packets as taught by Bare in order to overcome unnecessary and excessive traffic across the network allowing the bandwidth to be used more effectively (Bare: col. 1, lines 62- col. 2, line 3).

Claims 39-40, 45are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Bare.

Regarding claim 39, a data network as claimed in claim 38 wherein the nearest TE-X is further adapted to send a copy of each TE-LSA received from the other OSPF routers in the data network directly using a bi-directional communications connection set up with

each peer TE-X in the data network (Bare: col. 4, lines 12-25; col. 5, lines 62- col. 6, line 15; Dobbins: col. 14, lines 17-25, lines 36-46).

Regarding claim 40, a data network as claimed in claim 39 wherein the other routers in the data network query the nearest one of the at least one TE-X to obtain an explicit route to another router in the data network (Dobbins: col. 2, lines 60 – col. 3, line 8; col. 12, lines 54- col. 13, line 15; col. 15, lines 52-62).

Regarding claim 45, a data network as claimed in claim 38 wherein the data network is one of an Internet Protocol (IP), Multi-protocol Label Switched (MPLS), and Optical network (Dobbins: col. 24, lines 2-5; Figure 21).

Regarding claim 10,

The Dobbins and Bare references teach a system of connection-oriented services in a packet switched data using unicast packets network that uses LSA packets between routers.

The Dobbins and Bare references do not explicitly state the use of resource reserved LSAs.

The Crawley reference teaches a method as claimed in claim 1 further comprising a step of sending resource reserved (RR) TE-LSAs from the TE-X to peer TE-Xs in the network to advise the peer TE-Xs of resources reserved when an explicit constrained path is established (Crawley: col. 2, lines 34-45).

Crawley further teaches this method overcomes the failures of providing quality of service routing functions in a connectionless network (Crawley: col. 2, lines 18-24).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins and Bare while employing LSA resource requests as taught by Crawley in order to provide quality of service routing functions in a connectionless network (Crawley: col. 2, lines 18-24).

Claims 11 and 12 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al, Bare, and Crawley et al.

Regarding claim 11, the method as claimed in claim 10 further comprising a step of sending a release explicit route message from an OSPF router that requested an explicit constrained path to the nearest TE-X, after the explicit constrained path is released, to permit the TE-X to flush RR TE-LSAs related to the constrained path that was released (Crawling: col. 10, lines 20-37).

Regarding claim 12, the method as claimed in claim 11 further comprising a step of sending resource reserved (RR) TE-LSAs from the TE-X to peer TE-Xs in the network to permit the peer TE-Xs to flush the RR TE-LSAs related to the explicit constrained path that was released (Crawling: col. 10, lines 20-37).

Regarding claim 14,

The Dobbins and Bare references teach a system of connection-oriented services in a packet switched data network that uses LSA packets between routers with TLV fields.

The Dobbins and Bare references do not explicitly state the LSA having sub-TLV fields.

The Casey reference teaches an LSP packet (equated to LSA) that has a header field, which carries the hello message and also has the label space id (VPN ID) (Casey: col. 4, lines 16-29)

The Casey reference further teaches this VPN service overcomes problems of address conflict, security problems, scalability issues and performance problems (Casey: col. 1, lines 24-40, lines 45-49).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet

switched data network that uses LSA packets between routers with TLV fields as taught by Dobbins and Bare while employing a VPN ID in a subfield of the LSA as taught by Casey in order overcome problems of address conflict, security problems, scalability issues and performance problems (Casey: col. 1, lines 24-40, lines 45-49).

Claims 15-16 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al, Bare and Casey et al.

Regarding claim 15, the method as claimed in claim 14 wherein the sub-TLV is a VPN sub-TLV used to indicate to other nodes in the network the VPN Identifier (VPN ID) that is associated with a router (Casey: col. 4, lines 16-29).

Regarding claim 16, the method as claimed in claim 14 wherein the sub-TLV is a Replicating Capable sub-TLV used to indicate to other nodes that a router is capable of replicating data to more than one end point (Casey: col. 3, lines 59- col. 4, line 4; links between VRs and one or more routers at each private network).

Regarding claim 18,

The Dobbins and Bare references teach a system of connection-oriented services in a packet switched data network that uses LSA packets between routers.

The Dobbins and Bare references do not explicitly state routers or switches acting as area border routers.

The Tappan reference teaches TE-X as claimed in claim 17 wherein the TE-X is an area border router (ABR) (Tappan: col. 4, lines 60-67).

Tappan further teaches this approach relieves the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins and

Bare while employing area border routers as taught by Tappan to relieve the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Claims 19, 41-44 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Tappan.

Regarding claim 19, the TE-X as claimed in claim 18 wherein the ABR exchanges summary TE-LSAs with peer TE-Xs in other routing areas to provide information respecting paths across another area, and available resources associated with the paths (Tappan: col. 4, lines 60- col. 5, line 4).

Regarding claim 41, a data network as claimed in claim 38 wherein the at least one TE-X is an area border router (ABR) in a routing area of the data network (Tappan: col. 4, lines 60-67).

Regarding claim 42, a data network as claimed in claim 38 wherein the at least one TE-X is an autonomous system border router (ASBR) in an autonomous system of the data network (Tappan: col. 5, lines 62-col. 6, line 6).

Regarding claim 43, a data network as claimed in claim 41 wherein the ABR peers with TE-Xs in other routing areas of the data network to which the ABR is connected (Tappan: col. 4, line 60-col. 5, line 4).

Regarding claim 44, a data network as claimed in claim 42 wherein the ASBR peers with TE-Xs in other autonomous systems and other routing areas of the data network to which the

ASBR is connected (Tappan: col. 5, line 62-col. 6, line 32).

In response, the examiner respectfully submits:

The Dobbin reference teaches and Bare relies on Link State Protocol taught to multicast packets out to routers for network topology discovery as used in claim limitation 4. The amended limitation of claim 3 is met within the Dobbin reference (col. 5, lines 45-50) and Bares use of unicast to continue communication and updates of topology also taught in Dobbins (col. 14, lines 58-64) as update packets. The examiner feels applicant should focus more on defining what the traffic engineering protocol does and not how it is used.

Bare teaches multicast and broadcast to discover neighbors but teaches once discovered unicast is used to reduce bandwidth usage and increase efficiency.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R Bruckart whose telephone number is (703) 305-0324. The examiner can normally be reached on 8:00-5:30 PM with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (703) 308-6662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0324.

Benjamin R Bruckart
Examiner
Art Unit 2155 BRB
brb
August 16, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER